



UNIVERSITY OF  
TORONTO

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## CALL FOR PARTICIPATION STUDENT ARTS ENGAGEMENT AWARDS

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the arts for U of T's  
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THOSE AMAZING WOMEN  
In honour of International  
Women's Day, we celebrate  
some role models  
— page 8-9

MARCH 8, 2011 64th year, number 14

# the Bulletin

## SUMMER IN ANTARCTICA



Antarctica's icy landscape is both stunning and forbidding; summer here does not mean beach weather. Read about Professor Ray Jayawardhana's trip on page 6.

RAY JAYAWARDHANA

## Artist a Governor General's Awardee

BY ELAINE SMITH

**Painter Shirley Wiitasalo**, a faculty member in the Department of Art, is one of the winners of the 2011 Governor General's Award in Visual and Media Arts.

The awards, announced for 2011 in Toronto Feb. 22, are Canada's foremost distinctions for excellence in visual and media arts. They were created in 1999 through a partnership between the Canada Council for the Arts and then-Governor General of Canada Roméo LeBlanc. The awards recognize an individual's significant contributions to both the historical development and contemporary practice of the visual and media arts. Winners receive a prize of \$25,000 and their work is exhibited at the National Gallery of Canada.

In its citation of her work, the Canada Council for the Arts noted, "Shirley Wiitasalo's highly celebrated talent as a contemporary painter has received critical and public attention throughout her career. Undaunted by the medium's rich history, Wiitasalo creates work that is unpredictable, challenging and new. From her evocative imagery to her recent explorations that employ a more reductive vocabulary, Wiitasalo is interested in unravelling the mystery of painting itself."

"I am very honoured to receive this national award and join this year's group of distinguished artists," said Wiitasalo.

"Painting has always been my passion, and while a traditional medium, I believe it continues to be a vital contemporary art form."

Her work is part of numerous major national collections, including the National Gallery of Canada, and she has been the focus of solo exhibitions at Toronto's Power Plant, the Kunsthalle in Bern, Switzerland and the Art Gallery of Ontario. Wiitasalo has also taken

part in several important group exhibitions in Canada and internationally at such venues as the National Gallery of Canada, the Fodor Museum in Amsterdam and the National Museum of Art in Tokyo.

"This is a remarkable honour, awarded to artists who, by virtue of their distinctive voice, have a leading cultural

role," said Professor **Elizabeth Legge**, chair of the Department of Art. "Shirley Wiitasalo changes the way we think of the urban world — and probably the cosmos — we live in. It's Shirley's honour, but it brings great prestige and recognition to the University of Toronto."

A Toronto native, Wiitasalo is

... **ARTIST** ON PAGE 4

## Philosopher wins Killam Fellowship

BY JENNY HALL

**Professor Thomas Hurka** of philosophy is a winner of one of eight 2011 Killam Research Fellowships, announced March 1 by the Canada Council for the Arts.

Hurka teaches and researches in the area of moral and political philosophy, especially normative ethical theory. He is the author of numerous scholarly articles and books as well as the recently published *The Best Things in Life: A Guide to What Really Matters*, written for the layperson. He holds a DPhil from the

University of Oxford and has been at U of T since 2002.

"It's a great honour to have been selected for a Killam Fellowship," said Hurka. "I'm grateful to the Canada Council for having seen some merit in my research proposal."

The fellowship will provide Hurka a release from teaching and administrative duties for two years. "I plan to use that to complete a book on a group of British moral philosophers active in the late 19th and early 20th centuries and including Henry Sidgwick, G.E. Moore and W.D.

... **PHILOSOPHER** ON PAGE 4

## Speaking Up results are benchmark

BY ELAINE SMITH

**Preliminary results** from the University of Toronto's 2010 Speaking Up survey are in and will offer the U of T community some interesting food for thought.

Senior management, principals, deans, chairs and directors are looking first at the preliminary results for some key questions, among them those that address satisfaction and pride. In addition to being able to compare the 2010 results with information gathered in the 2006 survey, the U of T community will also have the opportunity to compare its results to Ipsos Reid's Representative

Employee Data for the Canadian Public Sector and the international education normative group (Americas). Their database relies exclusively on surveys carried out by Ipsos with representative samples of employees working in organizations of more than 100 people.

Some examples of these preliminary results are:

- In 2010, 77 per cent of all employees indicated they are somewhat or very satisfied with being a U of T employee, compared to 78 per cent in 2006. Only 71 per cent of Canadian public sector

... **SPEAKING** ON PAGE 4



## LETTER FROM THE EDITOR

## It's a women's world ...

at least for a day or two as we celebrate the 100th anniversary of International Women's Day. Across the campuses, a number of events have marked the significance of March 8 and this issue of the *Bulletin* aims to do the same.

It is certainly worth celebrating women's achievements during the past century — they are many and varied. It boggles the mind to realize that it was as recently as 1929 that Canadian women were first acknowledged as persons under the British North America Act and that it wasn't until 1919 that women were granted the right to vote in federal elections. International Women's Day is a time to honour the determination and perseverance of the women who fought for these rights, but it is also a time to celebrate the achievements of women in all walks of life.

Our centre spread on pages 8 and 9 focuses on four women, each of whom has made a mark in her field of endeavour. Luckily for U of T, they are only a small sample of the female talent housed on our three campuses. Whether or not these women consider themselves role models, their scholarship and leadership speak volumes.

In addition, women and their achievements feature prominently throughout this issue. By winning a Governor General's Award for Visual and Media Arts, painter **Shirley Wiitasalo** draws our attention to the canvas, a surface oft ignored in our computer age (see page 1).

On page 3, museum studies of the Faculty of Information helps us understand the excitement of research and discovery and shows us what tenacity, thoroughness and creativity can yield. Meanwhile, Dean **Cristina Amon** is recognized for her work in fostering a new generation of female engineers (see page 3).

Our issue also ends with a woman's words as senior lecturer **Judith Poë** explains how new approaches to teaching chemistry should improve learning outcomes.

So, enjoy this women's world for a couple of days. It's a place where people are encouraged to reach their potential, no matter which chromosomes they carry.

Cheers,

Elaine

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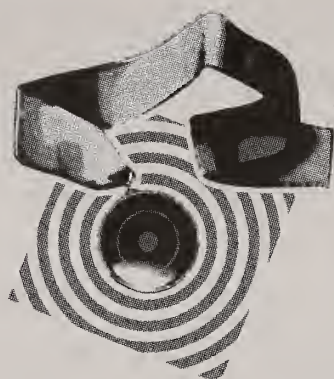
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The top and sidebar art on the front page is composed of photographs taken at the Antarctic.



## AWARDS &amp; HONOURS

decision-making and policy formation in health care by providing a scholarly forum that connects and educates researchers, providers, policy-makers and the public.

**Professor Perle Feldman** of family and community medicine, post-graduate program director at North York General Hospital, is the recipient of the 2011 Enid Johnson MacLeod Award, presented annually by the Federation of Medical Women of Canada to recognize a full member seen to contribute the most to women's health. The award was established to honour MacLeod, a longtime member of the federation from Nova Scotia known for her research into the use of curare for anesthesia. Feldman will be honoured at the federation's annual general meeting in the fall.

**Professor Gary Levy** of medicine, director of the U of T Transplantation Institute, was inducted as a fellow of the American Gastroenterological Association (AGA) Feb. 1. Through the fellowship program, the association honours superior professional achievement in clinical private or academic practice and in basic or clinical research. Fellowships are awarded to association members whose accomplishments and contributions demonstrate personal commitment to the field of gastroenterology. AGA's mission is to promote the science and practice of gastroenterology through the support of research, education, advocacy and practice.

**Professor Brian Schwartz** of family and community medicine is the winner of the 2011 Keith Neely Outstanding Contribution to EMS Award, given by the National Association of EMS Physicians in recognition of his outstanding contribution to EMS on the international stage. Schwartz is the first Canadian to have served on the association's board of directors and has led the way for Canadian EMS leaders to participate as part of this important and influential association. His leadership in EMS has been well known in Canada for many years and with this award he has received international recognition. Schwartz received the award at the annual conference Jan. 13 to 15 in Bonita Springs, Fla.

## FACULTY OF PHYSICAL EDUCATION &amp; HEALTH

**Professor Gretchen Kerr**, associate dean (undergraduate education), has been named to the Canadian Association for the Advancement of Women in Sport and Physical Activity's Most Influential Women of the Year List for 2010 as a member of the editorial board of the Canadian Journal for Women and Coaching. The honour celebrates the impact she's had on advancing sport and physical activity for women and girls. Published by the Coaching Association of Canada, the journal is made up of provocative and insightful articles outlining the values women bring to the profession.

COMPILED BY AILSA FERGUSON

## FACULTY OF ARTS &amp; SCIENCE

**Professor Ted Shepherd** of physics has been elected a fellow of the American Geophysical Union (AGU) for his outstanding contributions to geophysical fluid dynamics and middle-atmosphere research. Election to fellowship is considered a special tribute for those who have made exceptional scientific contributions and nominated fellows must have attained acknowledged eminence in Earth and space sciences. The honour is conferred on no more than 0.1 per cent of all AGU members. The purpose of the American Geophysical Union is to promote discovery in Earth and space science for the benefit of humanity.

## ROTMAN SCHOOL OF MANAGEMENT

**Keith Ambachtsheer**, an adjunct professor of finance and director of the International Centre for Pension Management, is the winner of the CFA (chartered financial analyst) Institute's Award for Professional Excellence, presented by the institute to a member of the investment profession whose exemplary achievement, excellence of practice and true leadership have inspired and reflected honour on the investment profession. A respected strategic analyst on pensions and investments, Ambachtsheer's articles have appeared in many profession journals. The award was announced Feb. 22 by the institute.

A paper by **Professors John Hull and Alan White**, An Improved Implied Copula Model and Its Application to the Valuation of Bespoke CDO Tranches, was one of two selected for a Special Distinction Award. The paper was a finalist for the first-ever Harry M. Markowitz Award for research and innovation in practical investment, established by the *Journal of Investment Management* and New Frontier Advisors, a Boston-based institution research and investment advisory firm specializing in the development and application of state-of-the-art investment technology. Candidates were selected from among papers published in the *Journal of Investment Management* in 2010.

## FACULTY OF MEDICINE

**Professor Ahmed Bayoumi** of health policy, management and evaluation has been named vice-president-elect of the Society for Medical Decision Making. The society is a professional academic organization of more than 900 members, founded to promote scientific methodological rigour in decision science applications to health care. Its mission is to improve health outcomes through the advancement of proactive systematic approaches to clinical

## KIOSK SHOWCASES SUSTAINABILITY

Ron Swail, assistant vice-president (facilities and services), displays the kiosk at 255 McCaul St. that illustrates U of T's many and varied sustainability endeavours from the 1970s to the present. Visit <http://sustain.fs.utoronto.ca/sustainability-timeline/> to see for yourself.



CAZ ZVYATKAUSKAS



# Engineering dean named Woman of Distinction

BY CAROLYN FARRELL  
AND ELIZABETH RAYMER

**Professor Cristina Amon**, dean of the Faculty of Applied Science and Engineering, has been named one of the 2011 YWCA Women of Distinction Award winners.

The YWCA Women of Distinction awards recognize the contributions of women who have improved the lives of girls and women. Amon, who is being recognized in the category of science and engineering, and six other women will receive the awards at the 31st Annual YWCA Women of Distinction Awards dinner May 18.

Amon was recognized for breaking glass ceilings and gender barriers in science and engi-

neering. Other recipients were honoured for providing comfort to the homeless, working to end violence against women, improving women’s access to health care and advancing women’s rights and economic security internationally.

Throughout her career, Amon has been a tireless advocate for increasing diversity in the engineering profession. Earlier in her career, at Carnegie Mellon University in Pittsburgh, she developed two major engineering outreach programs for under-represented groups: Moving 4th Into Engineering, an outreach program for female and minority fourth-grade students, and Engineering Your Future, a program for female students from Pittsburgh’s inner-city high schools.

As a young woman growing up in South America, Amon aspired to pursue a career as a teacher, after having been inspired by one of her own teachers. She quickly recognized the positive influence that strong female role models can have on young women. As a result, she has spent her career giving generously of her time and experience to mentor female students and academics.

As U of T’s first female dean of the Faculty of Applied Science and Engineering, she has demonstrated her commitment to

closing the gender gap among faculty and student populations and has successfully created a supportive environment in which women, in increasing numbers, have been able to thrive in leadership roles. Her leadership in this area has had a tremendous and enduring effect on the landscape of the faculty and the engineering community.

Amon’s engagement as a role model and a leader in attracting more women to the profession does not end at the University of Toronto. For example, in 2009, she arranged for U of T to host the National Conference for Women in Engineering where she delivered the welcoming address.

“Professor Cristina Amon has made pioneering contributions to the advancement of women in engineering and science,” said President **David Naylor**. “In particular, through her example as dean of the faculty and her commitment to mentorship, she has encouraged girls and young women to consider engineering as a profession.

“We are proud of this outstanding recognition. It is a tribute to the innovative and passionate leadership Dean Amon has brought to the Faculty of Applied Science and Engineering.”



Dean Cristina Amon

# UTM PROJECT GETS FEDERAL THUMBS UP

BY JANE STIRLING

**U of T Mississauga’s** newest building, the Instructional Centre, will allow the campus to grow in size and enrolment, and give students a top-class education in a modern state-of-the-art facility, said Gary Goodyear, federal minister of state (science and technology).

Goodyear and local MP Bob Dechert (Mississauga-Erindale) toured the Instructional Centre with Professor **Deep Saini**, vice-president and principal, Feb. 24 to see the progress made since the facility’s groundbreaking in October 2009. Through the federal government’s Knowledge Infrastructure Program and matching funds from the province of Ontario, \$70 million was invested in the Instructional Centre and laboratory renovations.

“This campus has firmly established itself as an innovative presence in the city and your growing enrolment really speaks to that,” said Goodyear, who also serves as minister of state responsible for the Federal Economic Development Agency

for Southern Ontario.

Dechert noted that the “landmark” facility features a number of green technologies and has contributed to the employment of about 120 on-site construction jobs and “hundreds more” in spinoff sectors. “People are concerned about Canada’s economic recovery, and this project has been very important to that.”

Saini thanked both the federal and provincial governments for their generosity. “We are extremely encouraged that your governments understand the importance of investing in higher education. This support will have a direct impact on the lives of our students here, giving them much-needed space to learn, study and work in a cutting-edge environment.”

The Instructional Centre, which will be substantially complete by April 2011, features a three-storey atrium, student lounges, a café, quiet study areas, and a full range of classrooms ranging in size from 30 seats to a 500-seat lecture theatre. The building was designed by Shore Tilbe Perkins + Will.

# Strategy may stem cholera outbreak in Haiti

BY PAUL CANTIN

A new study by a U of T professor and colleagues outlines the path of the cholera outbreak in Haiti and identifies immediate strategies for controlling the epidemic. Control strategies are needed, as Haiti is in the midst of a cholera epidemic that has killed 4,000 people, and sickened at least 217,000 more in all of Haiti’s ten geographical “departments.”

The study has been published early online in *Annals of Internal Medicine* ([www.annals.org](http://www.annals.org)). Researchers used publicly available data to produce a “gravity” model to predict the spread of cholera between Haiti’s regions based on the population of the departments and the distance between them. The model also assessed the impact of two distinct interventions: limited-scale vaccination and provision of clean water at the same scale. Through an optimized vaccination scheme to 500,000 individuals, the researchers predict a three per cent risk reduction of infection — about twice the risk reduction of clean water.

“Given the potential for thousands of additional cholera cases in Haiti, and the high case-fatality rate, a reduction of even a few per cent in total case counts will translate into a substantial number of lives saved,” said study co-author **David Fisman**, a profes-

sor at the Dalla Lana School of Public Health.

According to the authors’ model, clean water distributed to a relatively small subset of the population had a much smaller impact on case counts than vaccination of an identical number of individuals. This is because individuals who are protected from cholera via clean water are still vulnerable to infection through other routes, such as person-to-person transmission. Vaccinated individuals will not contract cholera or pass it along to others.

The authors of an accompanying editorial write that a comprehensive intervention strategy should include oral and intravenous rehydration and antibiotic therapy and cleaning up the public water and sanitation systems in addition to the vaccination program. In addition, surveillance must become part of Haiti’s immediate epidemic response and its ongoing overall health infrastructure.

“Our study suggests that the cholera epidemic in Haiti is likely to last well into 2011,” said Fisman. “We hope that our research may spur the international community to provide the additional logistical, economic, and political support that is needed to quell this epidemic and save lives.”

# Detective work worthy of Holmes

BY KATHLEEN O’BRIEN

**Vanessa Fleet**, a Faculty of Information student in the museum studies program, may want to consider a career as a detective instead.

While completing a 2010 summer internship at the Art Gallery of Ontario, Fleet discovered that a series of 1,702 photographs auctioned at Christie’s in 1997 and acquired by the gallery in 2005 were taken by the previously unknown French photographer and painter Abel Boulineau.

Fleet discovered an inscription on the back of one of the photographs stating the author’s date and place of birth (“Auberive—Avenue de l’Abbatiale — where I was born, 16 March 1839) that did not match the information for Émile Fréchon, the artist originally credited for the work.

Intrigued, Fleet obtained the parish records for the town of Auberive and discovered that only one baby boy was born on March 16, 1839: Abel-Marie Nicolas Boulineau.

“I pursued the inscription because it was a piece of hard evidence that I knew would lead to a definitive attribution to the maker,” she said.

Fleet’s historically significant discovery is now the subject of a new AGO exhibition highlighting Boulineau’s work. The exhibition features 70 never before seen photographs of rural French life taken between 1897 and 1916.

“Finding Abel Boulineau’s name in the parish

records for Auberive was very exciting. It was fantastic to draw the connection between the inscription on the photograph and the birth registry in the archives. Further, learning that Boulineau was a painter and seeing how his oil paintings relate to his photography was an exciting development in the attribution story,” Fleet explained.

In terms of the impact of this discovery on the photographs, it has given researchers and photo-historians a better understanding of how to approach and make sense of the work. But there is still much research to be done to position Boulineau’s photographs within broader histories of photo-based artist studies, landscape photography and travel photography at the turn of the 20th century.

Boulineau was a painter and teacher at l’Association polytechnique in Paris. He modelled many of his paintings after the photographs in this collection, which were given to the AGO by an anonymous donor in 2005.

“The discovery of his photographs reminds us that there is still much work to be done in the history of photography,” said Sophie Hackett, the AGO’s assistant curator of photography and the curator of this exhibit.

Where I Was Born...: A Photograph, a Clue, and the Discovery of Abel Boulineau opened March 5 and runs until August 21, 2011, in the AGO’s Carol Tanenbaum Gallery.



Vanessa Fleet

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WEDNESDAY, MARCH 30


**Dave Mooney**  
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Princeton University  
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## Artist a Governor General’s Awardee

CONTINUED FROM PAGE 1  
represented by Toronto’s Susan Hobbs Gallery, where her paintings are described as using a “characteristically reductive painting vocabulary” with “elusive figures that

emerge from and disappear into rich and murky depths.” “[In the large paintings,] I have a lot of fun playing with tentativeness. I can barely see it myself. In a small painting, the mark is

very direct, as if I were nailing down the shifting colours ... I’m dancing between these almost extremes: it’s this repertoire I can play with...” she is quoted as saying.

## Philosopher wins Killam Fellowship

CONTINUED FROM PAGE 1  
Ross,” he said. “Though they’re less well known than Aristotle and Kant, their approach to ethical issues was in my view more fruitful. My book will recover their neglected history and show how their work is a model for moral thought today.” The Killiam Research Fellowship is the latest in a string of honours for the philosopher. He is a member of the Royal Society of Canada and a past recipient of a Guggenheim

Fellowship. At U of T, he is the Chancellor Henry N. R. Jackman Distinguished Professor of Philosophical Studies. “Congratulations to Professor Hurka on this tremendous honour,” said Professor **Paul Young**, vice-president (research). “He is approaching fundamental questions with remarkable intellectual curiosity and creativity, distinguishing himself and the university with his first-rate work.”

The prestigious Killam Fellowships are awarded to full professors at Canadian universities and research institutes who have an outstanding reputation in their areas of research. The awards are made possible through the Killam Trusts by a bequest of Mrs. Dorothy J. Killam and a gift she made before her death in 1965. Recipients are chosen by a committee of 15 eminent Canadian scholars appointed by the Canada Council.

## Speaking Up results offer U of T benchmark

CONTINUED FROM PAGE 1  
employees and 68 per cent among the international education normative group indicate satisfaction.

- Pride in working at U of T has remained constant at 87 per cent between 2006 and 2010, much higher than the public sector norm of 47 per cent and the international educational norm of 68 per cent.
- Slightly more U of T employees feel valued today (65 per cent) than they did in 2006 (64 per cent). By comparison, only 50 per cent of Canadian public sector employees and 55 per cent of those in the international educational normative group feel valued.
- U of T has seen an increase in employee satisfaction with work-life balance: 67 per cent expressed satisfaction in 2010 compared with 63 per cent in 2006. Public sector employees also indicated a 67 per cent satisfaction rate, while those in the international educational normative group had a 70 per cent satisfaction rate.

A slide show of some more of the preliminary results, showing

breakdowns by staff and faculty, is also available.

When the full results arrive later this month, leaders and managers at the university will have the opportunity to look more deeply into the responses of various employee groups and divisional results. These will be widely shared with the university community through *the Bulletin* and online at <http://uoft.me/og>.

This year’s survey was more comprehensive than its 2006 predecessor. In addition to faculty, staff and librarians, Speaking Up 2010 also surveyed sessional lecturers and clinical faculty. Additionally, faculty was divided into tenure and teaching stream faculty while staff was broken down into union and non-union groups, allowing for a more detailed understanding of each of these group’s needs and interests.

“The survey data will be extremely useful to administrators throughout the university as they plan for the future,” said Professor **Angela Hildyard**, vice-president (human resources and equity), “and it is also very

helpful to see how we measure up against our peers, both in the educational sector and in the public service.

“We want to understand what matters to our employees and identify those areas where we are strong, as well as those where we need improvement. Our ultimate goal, of course, is to work towards making U of T an employer of choice for all of our faculty and staff.”

Divisional results will be provided to deans, principals and senior managers in early spring. Divisions will then have the opportunity to review their results and decide on local actions to address areas needing improvement.

“Like the 2006 survey, the 2010 results will undoubtedly highlight areas where improvement is indicated,” said Professor **Edith Hillan**, vice-provost (faculty and academic life), “and on a university-wide level we plan to create working groups to develop solutions to those issues. Divisions will determine the most appropriate means to address their local issues.”

# U of T STAFF & FACULTY

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# THE LANGUAGE OF IRAN

BY KELLY RANKIN

From its ancient past through to its revolutions, Iran is as complex a nation as any on Earth.

**Mohamad Tavakoli-Targhi**, professor of history and near and Middle Eastern civilizations and founding chair of the department of historical studies at U of T Mississauga, takes a historical look at Islamic rhetoric and political discourse in his work in order to break down popular misconceptions that Iran is a medieval society resistant to modernity.

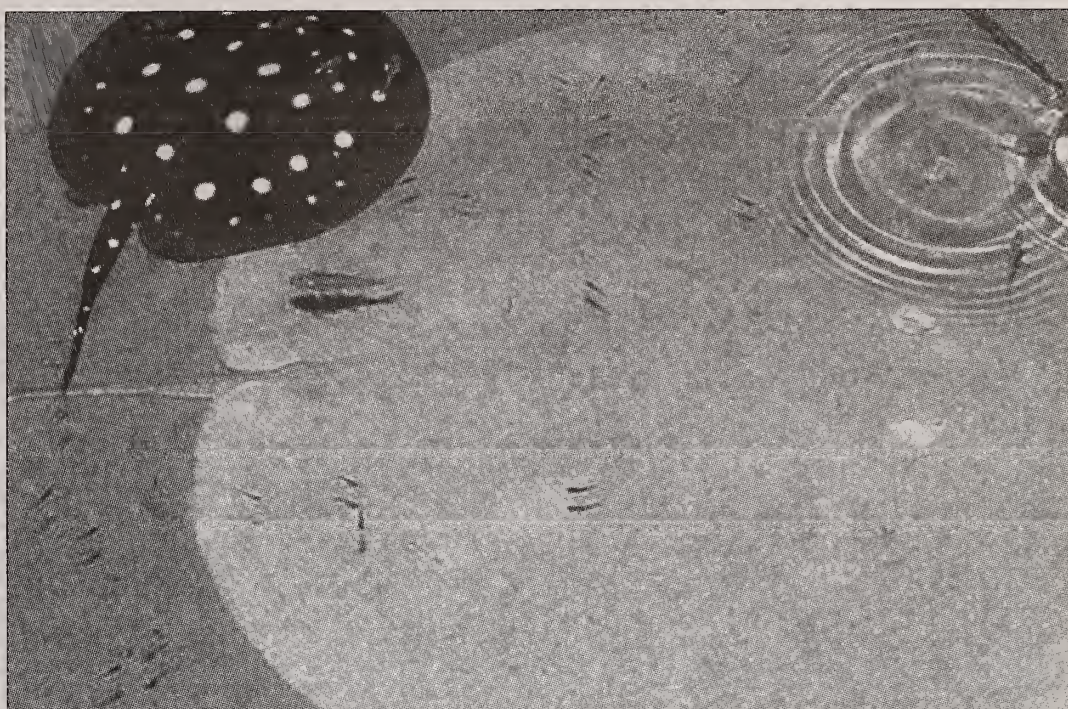
"What is the soul of the country, what is the true identity of the nation? In the 19th and 20th centuries these [questions] have been intensely debated," said Tavakoli-Targhi. "You have to know the ancient history in order to

was focused on this medical model of curing the state and society. Clerics tried to cure people of "depravities." These could range from gathering in such public places as the cinema, the mixing of men and women in public areas and other so-called "immoral" acts. Conversely, social actors also used the new language of science to critique the policies of the state.

"Part of the rise of Islamism has to do with the retooling and adaptation of modern science as well as using the modern medical sciences to present Islam as a cure for all social ills," said Tavakoli-Targhi.

After the Iranian revolution in 1979, Islamic jurisprudence took another turn, shifting from the curative language of medicine to a language of building and engineering.

"With the establishment



Professor Nathan Lovejoy of U of T Scarborough has discovered a new genus of Amazonian stingray, the *Heliotrygon*.

## UTSC biologist discovers new freshwater stingray genus

BY KAREN HO

A biologist from the U of T Scarborough (UTSC) has discovered a new kind of tropical freshwater stingray.

Professor **Nathan Lovejoy** of ecology and evolutionary biology at UTSC is co-author on a new study detailing the discovery of a new genus and two new species of stingrays found in the upper Amazon.

Lovejoy's 10 years of research with his collaborator, Marcelo Rodrigues de Carvalho of the University of São Paulo, confirmed the first new genus of stingrays from the Amazon region in more than two decades.

"It took a considerable amount of time to collect enough specimens to describe the species," said Lovejoy, who sometimes had to compete with international fish exporters for the bigger examples. "They are uncommon fishes and therefore difficult to obtain."

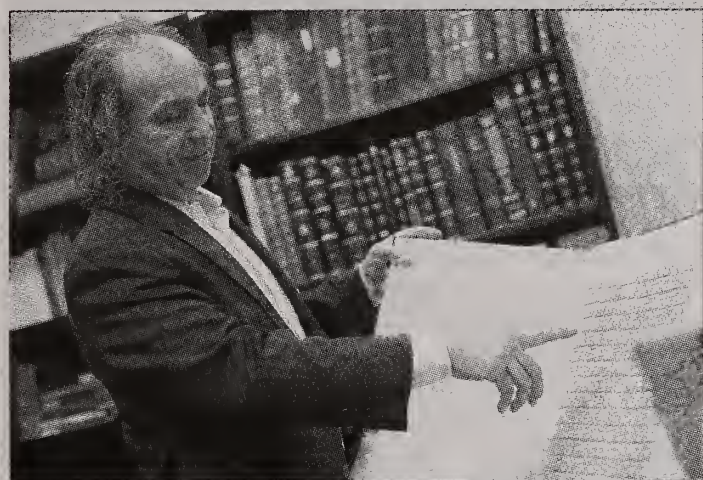
Their work in the upper Amazon confirmed the new genus, *Heliotrygon*, and the two new species, *Heliotrygon gomesi* and *Heliotrygon rosai*. Both are known for their large size, pancake-like appearance, having a distinct pattern of lateral line canals on the ventral surface and a degenerate spine.

Most of Lovejoy and

Carvalho's specimens came from the Rio Nanay River, near Iquitos, Peru. Their discovery brings the total number of neotropical stingray genera to four. Before their study, the last new genus of stingrays of the Amazon was described in 1987.

"The most important thing this discovery tells us is that there are quite likely to be other large fishes in the Amazon yet to be discovered and described," said Lovejoy. "Our understanding of the biodiversity of this region is not complete, by any stretch of the imagination."

Lovejoy's paper was recently published in the scientific journal *Zootaxa*.



Professor Mohamad Tavakoli-Targhi displays a volume of the Qur'an.

understand the contemporary political debates."

Tavakoli-Targhi's hypothesis is that political Islam faced a deep epistemological crisis in the 19th century due to recurrent cholera outbreaks and crises in public health. At the time, it was commonly believed that cholera was caused by bad air — and not contaminated water — because of strongly held beliefs regarding the ritual purity of water.

According to Islamic jurisprudence the site of cleansing, the water basin where people wash laundry, bathe themselves and their children and perform religious ablution before prayer, is always considered clean, even after use, due to the water's inner qualities and purification capabilities.

However, once science proved that contaminated water was the source of cholera, notions of cleanliness and purity were adjusted to accommodate new ideas about hygiene. Using the language of medicine, these notions were brought into places of washing and gathering.

With this shift in Islamic jurisprudence, during much of the 20th century attention

of the Islamic republic, the whole notion of social ills and social Islam as a cure no longer works. The clerics begin to shift from the metaphors and rhetoric of medicine to the language of engineering," explained Tavakoli-Targhi. As he argues, this form of political imagination is dominant today in Iran.

With an emphasis geared towards building a strong and loyal Iranian society, Islam is falsely seen as the sole cause for the shift towards this new political language. However, as Tavakoli-Targhi shows, Iran is shaped by a range of ideas that have evolved over centuries, and not just religion.

In the same way, western thinking cannot be understood solely by reducing another person's thinking processes to simplistic labels based on religious affiliation.

"In the Middle East there has always been a multiplicity of views. One cannot reduce Muslims, Christians or Jews to a theological argument of any kind," said Tavakoli-Targhi. "The kind of debates in Iran are not really different from debates happening in other parts of the world."

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# Astronomer turns gaze Earthward

BY SEAN BETTAM

## Professor Ray

**Jayawardhana** of the Department of Astronomy and Astrophysics generally spends most of his time peering into the furthest reaches of outer space through telescopes. The holder of the Canada Research Chair in Observational

Astrophysics explores the origin and diversity of planetary systems and the formation of stars and brown dwarfs.

Why then would he spend nearly two months with a team of geologists and NASA scientists on an expedition collecting meteorites

from the ice fields surrounding the South Pole? "Meteorites provide clues, they are leftover debris from our own solar system's birth. Studying them is complementary to what I do. But I'm not used to coming so close — within six inches — to the things I study."

Jayawardhana was part of a team of eight sweeping the southernmost continent's icy terrain on Ski-Doos, examining and collecting samples along the way. Antarctica is one of the best places on Earth to find meteorites, in part because its blue ice surface makes them quite easy to spot with the naked eye.

"I'm not a geologist, however, I was surprised at how quickly one learns to spot them," he said. "Meteorites

tend to not have sharp edges and have a so-called 'fusion' crust resulting from their journey through the Earth's atmosphere."

Learning to quickly discern a meteorite from a run-of-the-mill rock while on a moving snowmobile allowed the group to cover several hundred kilometres of territory over the course of the mission.

They collected more than 900 pieces that were immediately transferred to a materials lab at NASA's Johnson Space Centre for analysis and classification. Jayawardhana expects to wait as

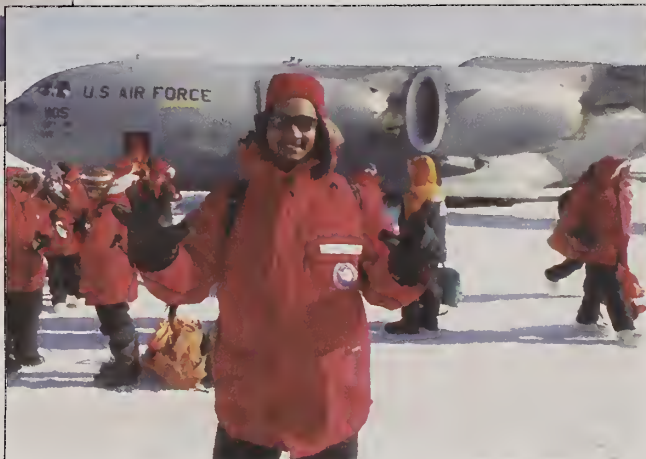
Jayawardhana to the wintry locale, during what was actually the height of the Antarctic summer. "I had had an interest in it," he said of the Antarctic Search for Meteorites mission that has been running for 35 years. "I met Ralph Harvey, the principal investigator from Case Western Reserve University, and asked if there was a chance of ever going." When someone didn't pass the physical in advance of the latest excursion, Jayawardhana's number was called.

He describes the five-week period as psychologically and physically challenging. The team was based in one camp and lived in pairs in tents.

"I read a book a week, we played card games and a lot of Scrabble. It was fairly isolating, we did have satellite phones



**Above: An Emperor penguin; Right: Professor Ray Jayawardhana in survival gear.**



long as a year for all the pieces to be properly examined.

However, the team did identify certain specimens for rush processing based on speculation, as there is always hope that some pieces have come from the moon or another planet. One piece in particular piqued their interest due to its transparent green crystal structure. Thinking that it might contain olivine, a mineral which has been found in the terrain of Mars, it was marked as a high priority.

It was a fortuitous set of circumstances that brought

but no Internet or other connections. It was a little bit tough to be off the grid for so long."

However, it was an excellent educational experience.

"What I learned will inform how I look at time-scales of materials that pass through photoplanetary discs," he said, referring to his method of observing and analyzing discs of gas and dust — the ingredients needed to create planetary systems — that circle young Sun-like stars. "We can combine the clues to build a fuller picture."

# COMPUTER SCIENCE FROM GREAT BEGINNINGS

BY KELLY RANKIN

**When a hockey player scores three goals in a single game it is called a hat trick. What is it called when computer scientists take three prestigious awards in a single academic year?**

This year, the Department of Computer Science saw Professor **Mark Braverman** receive a Sloan Research Fellowship, Professor **Aaron Hertzmann** collect the Steacie Prize for natural science and University Professor **Geoffrey Hinton** accept the 2010 Gerhard Herzberg Canada Gold Medal for Science and Engineering.

Recently, *the Bulletin* sat down with the acting chair, Professor **Fahiem Bacchus**, to discuss the department's recent bounty, what else is happening and what can be expected in the future.

When asked about these recent successes, Bacchus attributed them to the solid foundation on which the department was first established.

"The department was very blessed to have some really key people at the start. People like **Calvin (Kelly) Gotlieb**, **Patterson Hume**, **Tom Hull** and others" he said.

Today, a number of the foundational faculty continue to be engaged in the department, even some of the original founders like Gotlieb.

"It is a measure of the quality of our founders," said Bacchus. "Kelly is still contributing, it tells you what kind of a force he is that he's still able to do it at 90."

As a result of this exceptional foundation, the department has been able to recruit talented new faculty and attract great students. However, preserving and maintaining this high standard is an ongoing effort.

Prior to receiving financial support from the Ontario government's Access to

Opportunities Program nine years ago, department growth had stalled. With the influx of funding it was able to bring in new hires and resume building its core of excellence, the results of which are now evident.

"Now you're seeing an explosion of activity as those people become established and start to make their own input into the department and establish their research careers here in Toronto," said Bacchus.

The department also decided to take a stronger role in promoting itself and its researchers by forming an awards committee that looks carefully at who should be put forward for awards.

"Unless somebody takes that proactive step to actually do a nomination then you have this great person who is deserving but is not considered simply because they weren't nominated," Bacchus said.

When asked about what to expect next, Bacchus mentioned that some people are actively working on entrepreneurial ventures.

For example, former PhD student Andrés Lagar Cavilla, the 2010 recipient of the Natural Sciences and Engineering Research Council Doctoral Prize, and his supervisor, professor **Eyal de Lara**, have founded GridCentric (<http://gridcentric.com>), based on their work on cloud computing. As well, three computer science PhD graduates founded Thoor (<http://thoor.com>), a company that produces news amalgamator software.

As for future awards, Bacchus is reticent.

"We can't say much at this stage, it's an ongoing process. We continue to have people doing great work and as they do it, we continue to try to nominate them for awards that we think are deserving."

# Alternative Reading Week delivers service-learning

BY ELAINE SMITH

**Growing the community** was the theme for Alternative Reading Week 2011 and thanks to the efforts of about 200 students, growth is evident.

The fourth annual service-learning event, led by the Centre for Community Partnerships in partnership with the Learning Enrichment Foundation, offered students the opportunity to experience first-hand the importance of community service and active citizenship. They teamed up with community agencies in Toronto's Weston Mount Dennis neighbourhoods and

lent a hand with numerous projects, including indoor gardening, training young leaders and reading stories to children at area daycare centres.

Students who volunteered for the project took part in a pre-service leadership training session and an orientation with community members before diving into their community service opportunities. Alternative Reading Week also has a reflection component, including both a group discussion and written notes.

"We're hoping to make the learning deeper by incorporating various learning styles," said **Lisa Chambers**, director of the Centre for Community

Partnerships.

Chambers visited a number of the week's activities and was delighted to see the positive impact they were making.

"I watched three students work with seniors in a knitting circle and afterward, the seniors wanted to know if the students would be back the following week," she said. "When people experience poverty, social isolation is such a main piece of their lifestyle. Having 200 students come in is a major boost in the community."

The students who took part were also moved by the experience.

"I saw one student



**U of T student Kevna Dave reads to appreciative childcare participants.**

working right up until the bus left on the final day," said Chambers. "He told me, 'I don't want to stop now, because if I stop it

will be over.'

"There is a great energy when students, community leaders and residents all put their strengths together."



# Nine honoured with inaugural Inventor of the Year Award

BY PAUL FRAUMENI

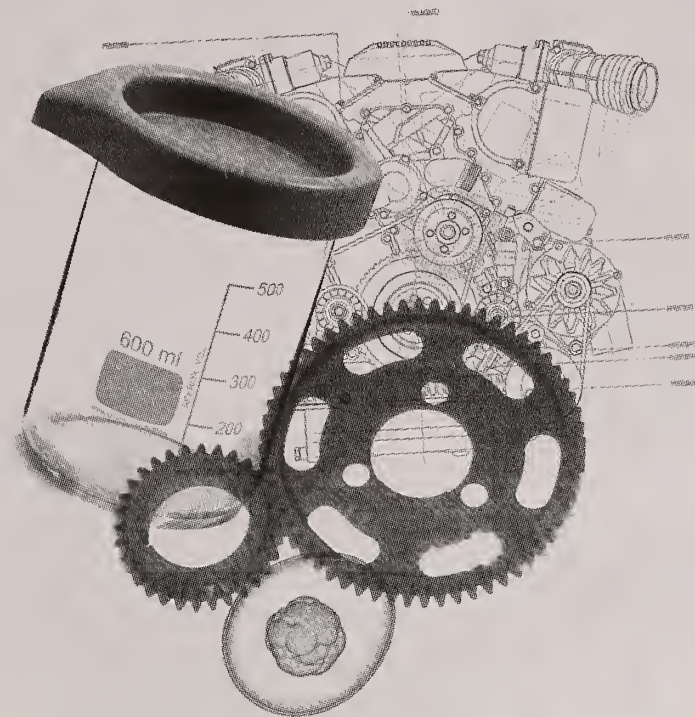
**U of T honoured** nine faculty members with awards in the first-ever Inventor of the Year competition March 7 at a ceremony at the MaRS Centre. The event capped a competition that drew 21 entrants from across the university.

"The purpose of the Inventor of the Year program is to recognize the superb contributions U of T scientists make to global society through their inventions," said Professor **Paul Young**, vice-president (research). "We have a great story to tell at U of T when it comes to inventions. This event marks the beginning of a new emphasis on telling that story."

Young thanked all the faculty members who submitted inventions to the competition and paid particular thanks to MaRS and MaRS Innovation for their role in partnering with U of T in research commercialization and "bringing our inventions to the world."

The winners:  
BIOMEDICAL AND  
LIFE SCIENCES

**Scott Tanner**, chemistry — Tanner and his colleagues invented a technology called mass cytometry, which enables the measurement of up to 100 biomarkers (proteins or gene "pieces" that allow the identification of a diseased cell) simultaneously at speeds of 1,000 cells per second. The technology is being used to investigate the genesis of disease and will be used in the discovery of drug candidates and to identify rare and diseased cells early enough



to allow less aggressive therapies. The team founded DVS Sciences Inc. to manufacture and market the technology.

**Shana Kelley**, pharmacy and medicine — Kelley invented a low-cost, ultrasensitive micro-electronic chip for disease diagnosis. The chip has significant utility in the rapid, cost-effective identification of biomolecular analytes that are markers for cancer and infectious diseases. The invention was the basis for the formation of Xagenic, Inc., which will commercialize the use of the chip for the diagnosis of infectious disease.

**Andrei Yudin**, chemistry — Yudin has invented a class of molecules useful for synthesizing peptides and proteins. Traditional cancer drugs are

small molecules but there is increasing interest in drugs that are peptides and proteins, which are made up of amino acids and occur naturally in the body and are less likely to cause side effects. The challenge is that they are not stable for long in the bloodstream and do not readily enter cancer cells, where they are needed. Yudin has produced biotherapeutic candidates with increased stability. His foundational technology has been licensed to Sigma-Aldrich.

ENGINEERING AND  
PHYSICAL SCIENCES

**Yu Sun**, mechanical and industrial engineering — Sun's group specializes in micro-nano engineering and precision instrumentation. Two of their patents provide complete solutions to automated injection of molecules or sperm into biological cells with direct applications in genetics, clinical in-vitro fertilization and drug screening. Based on these technologies, Marksman Cellject Inc. was established to commercialize solutions (hardware and software) for the clinical and life sciences industry.

**Constantin Christopoulos**, civil engineering — Christopoulos focuses his research on developing high-performance earthquake resistant damping devices and systems, especially those that reduce or eliminate damage to structures even under extreme earthquake loading. He is considered one of the world's leading researchers in the emerging area of new self-centring structural systems and disclosed five inventions in this area from 2005 to 2010. He was a founder of a U of T spinoff company, Cast ConneX, formed in 2007 to commercialize inventions relating to cast steel connectors and energy dissipation systems.

**Geoffrey Ozin**, chemistry — Ozin is an international leader in nanoscience. Ozin's recent research has generated pioneering patents based on two new classes of nanomaterials, periodic mesoporous organosilicas (PMO) and photonic crystals (PC). His work on the PC platform enabled the creation of Opalux Inc., a U of T spinoff company. Three technology photonic colour platforms are under active product development with strategic industrial partners at home and abroad. Opalux user-interactive bank notes, full colour dynamic reflective display, security devices and chemical and biological sensors are anticipated to appear in about a year.

INFORMATION AND  
COMPUTER TECHNOLOGY/  
SOCIAL SCIENCES AND  
HUMANITIES

**Nick Koudas**, computer science; co-inventor **Nilesh Bansal** — The team developed a tool that uses data mining and content aggregation technology to enable real-time monitoring of social media, including blogs, social networks, microblogging, message boards and news

sources. This invention creates possibilities for advanced do-it-yourself data analytics and is the basis for Sysomos Inc. The U of T startup grew at a phenomenal rate within two years of its founding, acquiring high profile clients internationally.

**Ronald Baecker**, computer science; co-inventors: **Alexander Levy**, **Aakash Sahney** and **Kevin Tonon** — The team invented MarcoPolo, an alternative to the communication aids used by those with speech and language challenges. While traditional aids are typically large and expensive custom devices, MarcoPolo runs as an application on Apple and Android devices, such as the iPhone and Google's Nexus One. MarcoPolo introduces features such as remote customization and location-aware vocabularies that change based on a user's physical surroundings. The result is a better communication aid at a fraction of the cost. In response to public interest, the team is launching MarcoPolo as a commercial product called MyVoice.

**Kumar Murty**, mathematics — Murty and research associate **Nikolai Volkovs** have created a data integrity algorithm that represents a breakthrough in terms of its speed and its large internal state space. It is able to authenticate data at wire speeds and can be customized for each individual user. Moreover, its stream-based architecture opens up new possibilities for authenticating data on the fly as well as building higher integrity systems for greater security and reliability. The invention has been patented and a spinoff company, Prata Technologies, was founded in 2007. Murty is also working with General Electric to apply this novel authentication technology in the smart grid.

A call for submissions to the 2012 Inventor of the Year competition will be posted in

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# WOMEN OF INFLUENCE

Academics at the University of Toronto lead by example.

## HUMANS MORE DIVERSE THAN WE ALLOW



Professor Gillian Einstein does research in sex-based biology.

BY KELLY RANKIN

**A question central to Gillian Einstein's** research is, How can I do science that would not make essentialist assumptions about the body?

Paraphrasing sociologist Myra Hird, Einstein, an associate professor in the Department of Psychology and Dalla Lana School of Public Health, said it's very odd that we think about diversity in other species but we don't think of diversity among humans. "For us, there are two of us, there's male and there is female," she said.

Einstein, a neuroscientist who works

primarily in the fields of neurodegenerative disease, cognitive neuroscience and sex-based biology, also believes we need to re-evaluate the monolithic category called women, where all women are treated the same, and create new ways of understanding women's health. The narrow focus and the lack of interdisciplinary research in women's health prompted Einstein to establish the collaborative graduate program in women's health four years ago.

"There's a reflection inherent in all these disciplines [medicine, humanities and social sciences] coming together, it is the kind of reflection we want to

have on the body," Einstein said.

For example, she says the current biomedical model, where we have one variable and everything else remains constant, is not really true. The assumption is that altering the body, for example removing ovaries to cure cancer, won't cause any problems for the body. It is similar to saying you expect to be able to remove the cornerstone from a building without causing any residual effects.

"You might not get ovarian cancer but other things do happen in the body," said Einstein. "To have informed choice, and possibly to mitigate that effect, we need to really understand what happens to this complex system we call the body."

Another issue of importance to health is how the environment affects gene signalling, which requires an understanding of the context in which individuals live. If, for instance, a daughter and her mother grow up living two very different lives, does this information, the circumstances of their experiences, have any bearing on their individual health and assumptions about hereditary diseases?

"Then it becomes a question of what is particular to this person that is actually affecting her health. Each person then becomes her own unit and has her own ecological niche and life conditions," said Einstein.

Exploring questions like these through an interdisciplinary lens is what makes the collaborative graduate program in women's health unique.

"I think it's something special about U of T, there isn't another program like this, as far as I know, internationally," said Einstein.

Currently, there are 25 students enrolled in the program from disciplines as varied as, religion, anthropology and the health sciences.

"I think of it as a hub for thinking about medicine, bodies and integrating gender into the medical school curriculum," said Einstein. "It's a place for foment, as well as a place for training students."

**"I think it's something special about U of T, there isn't another program like this ..."**

Professor Gillian Einstein

## CARIBBEAN A FOCUS

BY ANJUM NAYYAR

**She's the director** of Caribbean Studies at New College, an associate professor in Women and Gender Studies, a mother of two young girls and a weekly contributing columnist for a newspaper in Guyana. Yet, when you speak to **Alissa Trotz** you would never know that she has such a vast amount of juggling to do because the stress never crosses her face. Instead there's a calm, very focused and determined demeanour that makes you want to be just like her.

While Trotz is somewhat uncomfortable when asked whether she considers herself to be a role model, she admits that students can benefit when they are inspired.

"I think it's very important for the students who pass through our classrooms to see me as a woman in academia with a young family," she said. "It's also important for communities to see me as a woman of colour in a tertiary institution within the

## MOTHERING ON HER MIND

BY ANJUM NAYYAR

**U of T Mississauga professor Alison Fleming** can trace her research interests back, in part, to her own life experience.

"My mother was an economist with the United Nations at a time when women were not doing that," said Fleming. "She was a big role model, but on the other hand, the result was that I saw very little of her. So in some sense my decision to study mothering is not independent of that experience. I couldn't understand why she didn't spend more time with me."

Fleming's life work is the study of maternal behaviour. As a Canada Research Chair in Neurobiology and a professor in psychology, she has explored maternal behaviour in both non-human animals and humans from a psychobiological perspective. One of the key questions she and her students consider is how does the mother's brain and neurochemistry relate to the quality of mothering and how do genes, hormones and experience interact in the regulation of mothering?

Fleming said in addition to a personal interest in mothering, she had people who inspired her along the way.

"Since my undergraduate years at Columbia University, I have been interested in hormones, the environment and behaviour."

"I then did my undergraduate thesis under a neurobiologist, Burt Slotnick, who studied maternal behaviour in mice, and with him I became interested in how experience can also affect the brain and behaviour. I then went to continue my studies of maternal behaviour at the Institute of Animal Behavior at Rutgers University and worked with the famous psychobiologist, Jay Rosenblatt. He was a real role model for me, being both a rigorous experimentalist and a humanist."

In her personal life as a parent Fleming said mothering was a top priority and she often turned down opportunities to ensure she was present as a parent.

"I work pretty hard and pretty non-stop. Being a CRC and a faculty member has been easy, since I view the teaching and research mission of both roles as well integrated with one another," she said.

"The primary conflict as a woman scientist is how to juggle being a parent and a scien-



## FOR SCHOLAR'S CURIOSITY

context of Canada. We still have a very long way to go and our faculty is far less representative than the diverse student body that we teach.

"A role model is important in terms of providing some sort of inspiration but that's all it should be. Do I see a role model as someone whose example should be slavishly followed? No. I certainly continue to make my share of mistakes and we each have our own paths to carve. But I do see it as opening the door to possibilities for others to enter on their own terms and raise new critical questions."

Growing up in Guyana, Trotz said her own role models were extremely influential.

"My family always nurtured intellectual curiosity. My mother was a great example of being independent and driven. A group of my parents' friends became hugely important in my formative political years and their dedication and commitment to something

**"A role model is important in terms of providing some sort of inspiration ..."**

Professor Alissa Trotz

larger than themselves provided an early inspiration to me."

Deciding to pursue a career in academia, however, wasn't a decision that came easily to Trotz.

"I wanted to be a veterinarian, then a lawyer," she said. "I still have dreams of pursuing a legal career. I think my entry into academia was driven by an intellectual curiosity about a set of questions that developed over time and that always took the Caribbean as the point of departure."

It's this passion for her home in the Caribbean that has motivated her work. Trotz's research looks at such topics as transnationality and diaspora, as well as violence, memory and commemoration. She believes Caribbean society has valuable lessons to offer Canadians.

"The Caribbean generates so many exciting questions and offers important, useful and relevant ways of thinking



Professor Alissa Trotz of Caribbean studies is an expert at multi-tasking.

about the world. When we talk about multiculturalism in Canada we go back to 40 years ago. But the Caribbean has been grappling with these questions for so much longer. So in our midst in the

Americas, we have an example of multiculturalism with questions of power and difference at its centre that is 10 times older than what we call multiculturalism in Canada."



PHOTO COURTESY OF ALISON FLEMING

Professor Alison Fleming

tist and this, of course, is a challenge when you love both activities and both are a draw. But parallel processing and multitasking help a lot. And so, of course, does having considerable social support."

She also respects her own students who are in similar roles.

"I have a lot of female students and I adore them. I'm like a mother in many respects to them," she said.

As much as they may return her regard, they don't necessarily aspire to be like her.

"There's an odd way that I may not be such a positive role model. I've been told by some of my students that watching me in action makes them think that they don't want to be doing what I'm doing," said Fleming. "They don't want that kind of pressure."

Fleming said her ongoing goal is to help organize

researchers across the university and the city who study parenting and parent-child interactions. She is involved

in this at the Centre for the Study of Parenting with U of T professors **Joan Grusec, David Haley and Jennifer Jenkins**. She expects that research on parenting will be a major contributor to the recently conceived university initiative, The Institute for Human Development.

**"The primary conflict as a woman scientist is how to juggle being a parent and a scientist ..."**

Professor Alison Fleming

## VIRGINIA WOOLF SCHOLAR EXPLORES MOVEMENT IN FICTION

BY KELLY RANKIN

**Are too many** books written and published? A funny question considering we are a university.

However, this isn't a contemporary question. It is the title of an unpublished BBC broadcast by Leonard and Virginia Woolf.

**Melba Cuddy-Keane**, a Virginia Woolf scholar and professor in the Department of English at U of T Scarborough and the St. George campus, said Woolf would have replied, "No, there should be more by more people."

Woolf was concerned for the marginalized voices of the middle class and women of her time and felt that people outside the establishment deserved to be heard.

"My really strong interest in Woolf is her interest in encouraging reading and writing: trying to get people to become broad readers and trying to get everybody to put something about their own lives down in their own writing," said Cuddy-Keane.

In addition to breaking down patriarchal values, Woolf was also concerned with getting readers to think about things from different sides.

"Her fiction is so concentrated on multi-perspectivism, seeing things from the point of view of so many different characters," said Cuddy-Keane.

Cuddy-Keane herself explores this notion of multi-perspectivism in two forthcoming books, *Narrative and Pluralist Competence: Cognitive Flexibility for a Modern World* and *Modernism: Keywords (1880 - 1950)*, written with UTSC colleagues **Marybeth Curtin, Adam Hammond and Alexandra Peat**.

Her work relies on the analysis of what she calls "non-conscious thought."

"Our creative faculties are aided by non-conscious cognitive processes," said Cuddy-Keane. "These are processes we are not consciously aware of but that influence us and can be brought into conscious thinking in very creative ways."

In *Modernism: Keywords* the idea of multiple perspectives is explored by focusing on how certain words are used,

why they refuse to settle into any one meaning and why some words defy a consensus meaning. "[A word circulates] and in its circulation it changes its significance and implications," explained Cuddy-Keane.

With *Narrative and Pluralist Competence* Cuddy-Keane explores perceptual flux

through themes such as the spatial mapping of fictional characters.

By examining a character's body movements, as in the solitary walks taken by Elizabeth Bennett in *Pride and Prejudice*, Cuddy-Keane aims to show that these physical actions are not

just symbolic gestures but actually work to liberate the character from her rigid conceptions and put her back in touch

with non-conscious thinking and non-categorized perception.

She argues that these moments are applicable to understanding non-fiction and real-world problems because readers are invited to relive the character's experiences by following these moments through the act of reading or by re-enacting these contemplative actions for themselves.

By examining the movement of the body through space, we can cultivate an awareness of our conceptual structures, which enables us to consider other perspectives and reformulate our thinking.

"Everything is constantly moving and perception is perception of a constantly moving world," said Cuddy-Keane. "[Cultivating awareness of movement and change] has such a valuable function in breaking up our tendencies to attach ourselves to rigid categories."

**"My really strong interest in Woolf is her interest in encouraging reading and writing ..."**

Professor Melba Cuddy-Keane



Who's Afraid of Virginia Woolf? Certainly not Professor Melba Cuddy-Keane of English, a Woolf scholar.



# Understanding the business of engineering

BY LIZ DO

A new engineering business minor and two certificate programs, in engineering business and in global engineering, have been approved for launch in fall 2011. The new engineering business offering is a collaboration between U of T's Faculty of Applied Science and Engineering and the Rotman School of Management.

"The goal of the new engineering business minor is to give our engineers the basic business concepts that will

enable them to move across the technology-business barrier that often exists in companies," said Professor **Jonathan Rose** of electrical and computer engineering, the new program director. "They will be able to engage in the strategic business thinking that goes on and bring much more to the table when combined with their technological and scientific acumen."

Students interested in the engineering business minor will take a set of six courses in strategy and marketing, accounting and finance, as

well as management and entrepreneurship. An engineering business certificate will require the completion of three courses.

The new engineering business minor will enable engineering students to understand and operate in the language of business, and to engage more fully in the companies in which they work, said Rose.

With the creation of the Centre for Global Engineering in 2009, engineering will also offer a new global engineering certificate, allowing students to develop their knowledge of

global issues including global energy systems, innovative finance techniques and current theories in international development and foreign aid. To graduate with a global engineering certificate, engineering students must successfully complete three courses.

"In today's global marketplace, we want to graduate engineers with a strong technical foundation who are also business-literate, with international knowledge, leadership and entrepreneurial skills," said Professor **Cristina Amon**, dean of the Faculty of Applied

Science and Engineering.

"Our engineering business minor graduates will understand all aspects of engineering work, from inception of an idea to technological innovation and commercialization, through strategy, marketing, management and finance; they will be able to manage the technology as well as the business aspects of their jobs.

"Our global engineering certificate will prepare U of T engineers to work internationally, both overseas as well as from home."

## Data centre gives UTSC computing more 'byte'

BY ANDREW WESTOLL

The new servers are in place, the cooling systems are in full swing and the waterless fire suppression system is at the ready. This can only mean one thing: UTSC's brand new, state-of-the-art South Campus Data Centre (SCDC) is about to go online.

Located in a secured area on the roof of the Academic Resource Centre, the new SCDC marks a massive improvement to UTSC's information technology infrastructure.

The old data centre was built in 1997. But over the intervening 14 years, UTSC


has added 50 per cent more building space and the student, staff and faculty populations have grown by 100 per cent. Meanwhile, Information and Instructional Technology Services (IITS) has facilitated a massive migration of paper-based business processes onto its IT infrastructure. All of these factors have stretched the current data centre to beyond full capacity.

The new centre can accommodate 16 racks of computing equipment with room for future expansion if required. The investment will alleviate UTSC's critical IT crunch and it will also allow IITS to improve

the existing infrastructure and introduce new services in accordance with the UTSC strategic plan.

The SCDC is the first step towards the creation of a data centre cluster at UTSC, to be fully realized with the opening of the new Instructional Centre this May. The two data centres will be cross-connected, establishing fail-resistant network and systems infrastructure.

"This is the single biggest investment in IT in the history of UTSC," said **Zoran Piljevic**, director of IITS. "With this new data centre, UTSC now has the most sophisticated IT infrastructure across the entirety of U of T."



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**Position Title:** The Raymond Pryke Chair in the Margaret MacMillan Trinity One Program

**Rank:** Assistant Professor

**Deadline:** March 31, 2011

**Job Description:** Trinity College invites applications for the Raymond Pryke Chair in the Margaret MacMillan Trinity One Program at the Assistant Professor level commencing July 1, 2011. This is a three-year appointment renewable for two further years.

The chair holder will be the director of the Trinity One program and will work towards its development and growth. He or she will teach in the program and will be its "public face."

The program has an International Relations stream and an Ethics stream, each comprising two full-year seminar courses and a co-requisite course, all at the first-year level. For generic descriptions of the seminar courses, and for further information about the program, visit [www.trinity.utoronto.ca/trinityone](http://www.trinity.utoronto.ca/trinityone).

The chair holder will teach two full-course equivalents, including a (full-year) seminar course in the International Relations stream or the Ethics stream of the Trinity One program. The second full-course equivalent will also be in the Trinity One program, or will be in Trinity College's specialist/major program in International Relations or in the College's major program in Ethics, Society, and Law, or will comprise a half course in one of these programs and a half course (undergraduate or graduate) offered by a related department (e.g., History, Political Science, Philosophy) in the Faculty of Arts & Science at the University of Toronto.


The chair holder will be a Fellow of Trinity College.

**Qualifications:** Applicants must have a Ph.D. or the equivalent. Areas of competence: ethics and literature or ethics and political theory (Ethics stream); international relations (IR stream). The College is seeking applicants with superior teaching abilities and with experience teaching in the humanities or social sciences at the university level, preferably including first-year-seminar teaching. Candidates with experience in the administration of an academic program at the university level are preferred.

**Applications:** Applicants should ask three referees to send a letter of recommendation under separate cover to the address below. These letters must be received by the application deadline. Applicants should also send a curriculum vitae, a teaching dossier, a summary of qualifications, and a statement of interest in the position to:

Professor Derek Allen, Dean of Arts  
Trinity College - University of Toronto,  
6 Hoskin Avenue  
Toronto, Ontario  
M5S 1H8 Canada  
The closing date for applications is March 31, 2011.  
Inquiries should be addressed: [derekallen@trinity.utoronto.ca](mailto:derekallen@trinity.utoronto.ca)

Trinity College is committed to employment equity in all forms.  
All qualified candidates are encouraged to apply; however, Canadians and permanent residents will be given priority.



**ALEXANDER LECTURES**

**The Politics of Race and Sexuality**

**Dwight A. McBride**  
Daniel Hale Williams Professor of African American Studies,  
English & Performance Studies  
Dean of The Graduate School & Associate Provost for Graduate Education  
Northwestern University

**TUESDAY, MARCH 29**  
**Baldwin and the New Black Studies**

**WEDNESDAY, MARCH 30**  
**The Perils of Black Leadership**

**THURSDAY, MARCH 31**  
**Toni Morrison, Intellectual**

**FRIDAY, APRIL 1**  
**Race, Faith and Sexuality**

**4:30 p.m., Room 140, University College  
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## 2011 Governing Council Elections — Candidates' Statements

**Voting Period: Monday, February 28, 2011 at 9:00 a.m. to Friday, March 11, 2011 at 5:00 p.m.**

**Online voting will take place on ROSI ([www.rosi.utoronto.ca](http://www.rosi.utoronto.ca)), and paper ballots will be mailed to post-graduate medical trainees.**

### Full-Time Undergraduate Students, Constituency I

**(Faculty of Arts and Science, University of Toronto at Mississauga, University of Toronto at Scarborough)**

#### Erik Bracciodieta

My name is Erik Bracciodieta and I am asking for your vote. I am in third year and have had it up to here with governance. Do you know who your current representatives are? Thought so. If you elect me, I will promise to be open and listen to your ideas and concerns. I stand for greening our campus (like banning the sale of bottled water), reducing corporate influence, speaking up for the university's largest group (undergrads!) and wise, ethical spending of our tuition.

#### Nicole Fogel

Hello! I am from the United States and I like to travel and ski. I would describe myself as being understanding, punctual, and dependable. Throughout high school, I was involved in Disability Walks, National Honor Society (Secretary), and had work experience at an ophthalmologist's office. Here at the University of Toronto, I have further enhanced my capacity to effectively guide others by becoming involved in the Faculty of Arts and Science Council, French Club, and Eyes of Hope Volunteer Club during my first year. With your help, I hope to make a memorable difference for the University of Toronto community. URL: [nicole.fogel@utoronto.ca](mailto:nicole.fogel@utoronto.ca)

#### Sowmya Kshatriya

Sowmya Kshatriya is a second year student in the Faculty of Arts and Science at University of Toronto, St. George Campus, working in a genes, genetics and biotechnology specialist program. She has displayed tremendous leadership qualities during her high school years and received many awards and certificates as a School House Leader, Class President, Class Prefect, Student of the Month and Student of the Year. Her motivation to run in the elections is to serve as a sincere member of the Governing Council helping to support the University's mission and all its concerns zealously with all dedication. <http://www.utsu.ca/index.php/section/5>

#### Ron Leung

As a student who passionately believes in student activism and bettering campus life, I thank you for taking the time to contribute toward shaping your university experience by partaking in this year's Governing Council elections. Listening equally to all three campuses is imperative and as a candidate from UTSC, I promise you that all campuses' concerns and ideas will be voiced. Please feel free to express your own addendum towards my proposed platform. And needless to say, please express the changes you would like to see happen within our university that can be affected by my candidacy. Best, Ron Leung.

#### Aly Madhavji

Together, we can improve our University. I understand and relate to the many difficulties surrounding academics, social life, and diversity experienced by domestic and international students. With an understanding of the financial burden we students face, I promise to strive for lower tuition fees or a tuition freeze and will work towards reducing parking and residence rates across all campuses. I hope to work with you and will always be open to each of your concerns and suggestions. You can contact me at [aly.madhavji@utoronto.ca](mailto:aly.madhavji@utoronto.ca) and join the Facebook Group: 'Vote Aly Madhavji for Governing Council'. Together, We Can Make a Difference!

#### James Y.K. Park

My name is James Yong Kyun Park, and I'm a third year student studying English and sociology. As a current member of the Governing Council, I would love the opportunity to continue the work that I've been involved in this past year. Such items include removing the costs associated with reviewing a past written exam, offering students who are currently paying tuition on a course by course basis the option of program fees, and advocating for the implementation of a self-declaration of illness. I promise to continue working with the students' best interest in mind. Vote James Yong Kyun Park.

#### Jorge Prieto

Hello, My name is Jorge Prieto and I am excited to run for Governing Council. I

propose practical but important changes to make our lives at university better, no matter what academic year or background we may come from. We can reduce tuition by paying only for classes we are taking (abolish flat fees). We can improve course selection (no more worrying about RDSI waiting lists). We can empower clubs and societies. In general, we can alleviate unnecessary burdens to enhance our experience. Because, as a wise man once said: we cannot let our schooling interfere with our education.

#### Dean (Di) Wu

Dean is currently finishing his second year at University of Toronto Scarborough. Having lived in parts of China, New York, Saskatchewan, British Columbia and Ontario, Dean loves exploring different cultures, especially when it comes to international cuisines! Regardless of the various locations he has lived in, Dean has been consistently involved in his community as he has served as the Vice-president during high school years and worked as an assistant program supervisor for his community centre. Dean is running for this position because of his desire to continue to contribute to his community and make friends along the way.

#### Bill Zhao

Dear fellow students: the time has come. Cast your ballot for Bill. For I will listen to your voices, fight for your rights, and make sure you get what you deserve. It's your university, it's our university. And united, we have the power to shape our tomorrow. Together, we will make U of T an even better place for all!

### Full-Time Undergraduate Students, Constituency II (Professional Faculties)

#### Cary Ferguson

During his undergraduate studies, Cary researched student advocacy issues for the Vice-President (Education) of the McMaster Students Union. Cary also helped set policy at three general assemblies of the Ontario Undergraduate Student Alliance. As a law student, Cary spends many of his days discussing policy and the law. Cary's experience with student advocacy and the law make him uniquely suited to ensure that student needs and concerns are taken into consideration by the Governing Council. When he's not promoting student issues, Cary enjoys photography, losing at squash, and naps in the library. For more information, please see [www.aboutme/caryferguson](http://www.aboutme/caryferguson).

#### Nicholas Gan

Hello fellow students! My name is Nicholas Gan and I am a 2nd year undergraduate student currently enrolled in chemical engineering. I want to become a member of the Governing Council because I want to be the voice for the U of T community. I want to be the person that everyone can come to when there is a problem. I want to make sure that every person has their voice heard. Most of all, I want everyone at U of T to experience the best university life of their lives. Vote Nicholas Gan for member of Governing Council!

#### Kent Kuran

[www.KentKuran.com](http://www.KentKuran.com)  
As an active 3rd Year engineering student and your returning Student Governor, I will strive to represent the professional faculty students. I believe that all disciplines should be equal at UofT, including engineering and the other professional programs. Not only do we unjustly pay more and get less, but we are also excluded from the wider UofT community. We should have equal access to courses, colleges and residences. If re-elected, I will continue to work in these areas while reaching out to the student body. Vote Kent Kuran again!  
[kent.kuran@utoronto.ca](mailto:kent.kuran@utoronto.ca)

#### Azadeh Mostaghel

I believe we need to work for a better tomorrow. We have to govern our university not only for building our future, but also for shaping the future of our nation. Some believe "the future is not a gift, it is an achievement." University of Toronto has to take the lead to out-educate its students so that they can out-innovate others in a very competitive world. University of Toronto is a world-

class institution and it should contribute to training the leaders of tomorrow not just for Canada, but also for the world in many fields and locations.

#### Ayo Odutayo

Ayodele Odutayo is a 2nd year medical student at UofT. He currently serves as the medical director of the UofT International Health Program (UTIHP), a role in which he oversees over 20 campus-wide global health initiatives and advocates for increased global health opportunities for students. Ayodele is also a member of the Faculty of Medicine Appeals Committee and has worked as an intern at the World Health Organization to conduct a study on knowledge management. If selected to the governing council, he will place a specific focus on financial support for students and the appropriate distribution of funds among faculties.

#### Manveen Puri

I graduated from New College in 2009 and am now in my second year of medicine. With six years of experience in student leadership at UofT, I bring a mature yet fresh perspective to Governing Council. Students are ultimately UofT's raison d'être, and I believe we can achieve practical results if we approach issues with reason rather than passion. I will keep the interests of professional students in mind on each vote, and as your representative will advocate for affordable tuition fees, greater links between professional faculties, a more sustainable UofT, and open communication with the administration. Vote Manveen Puri! [www.manveenpuri.ca](http://www.manveenpuri.ca)

#### Manisha Verma

I am a recent graduate from University of Toronto's Medical Doctorate program. I am currently pursuing a residency in Family Medicine at University of Toronto. Over the years, I have developed a keen interest in becoming involved with academia in ways that make a difference. Building on this, I now have a desire to help shape the university's strategic direction. I believe that my passion for education, strengths, and sincere aspiration to contribute to the institution that has provided me with such a thoughtful and quality education make me an ideal candidate for a position on the 2011/2012 Governing Council.

### Part-Time Undergraduate Students

#### Ken Davy

The need for financial support. The need for classroom availability and accessibility. The need for experienced representation at the Governing Council level. These are all challenges facing part-time students. I'm Ken Davy and a fourth year student with three years of Governing Council experience. As a part-time student, parent, and small business owner, I understand the challenges we face. I'm asking for your vote this year to become the voice of part-time students on Governing Council. I've worked hard to expand the financial resources available to part-time students, and plan to continue this effort. Read more at [kendavy.wordpress.com](http://kendavy.wordpress.com).

#### Maria Pilar Galvez

Vote Maria Pilar GALVEZ to be your part-time undergraduate representative on the Governing Council. As an executive of two UofT unions, I recognized issues students face in accessing post-secondary education and acknowledged systemic barriers our own university holds. I sit on the Erindale College Council as a part-time representative, articulating that needs of part-time students differ from those full-time. I want to keep part-time student interests a priority and to communicate with all students, faculty, and staff so that we may work together to achieve affordability and accessibility, and to create the university experience our current governance withholds. Vote GALVEZ!

#### Dustin Hiles

Dustin Hiles is dedicated to bringing a students-first policy to his Governorship at U of T. By engaging students through monthly town halls and round tables, Dustin will be an advocate for accountability to the student body, making his vote yours! ALL policy decisions will be based solely on the wants and needs of his constituents, allowing for a real student voice on the Governing Council.

[Dustinhiles.blog.com](http://Dustinhiles.blog.com).

#### Brian Kerr

I am running for the Governing Council because I feel that I can offer a unique and essential perspective to the council. I was a full-time student of the University of Toronto in the 1970's; I am now a part-time student completing my degree. I am also the father of a current University of Toronto student, a Certified General Accountant and an employee of the students of The University of Toronto Scarborough Campus (as the Chief Account for the Scarborough Campus Students' Union.) I expect to be able to use these to represent all the part-time students at the university.

### Graduate Students, Constituency I (Humanities and Social Sciences)

#### Jessica Anania

Holds a Bachelor's Degree in Political Science from Ryerson University and is currently enrolled to complete her MBA at the Rotman School of Management. Prior to her MBA, Jessica worked on a political campaign for the 2008 federal election. From there she went to work in an entrepreneurial setting in a family company, learning the fundamentals of business.

#### Frank Samuels

Frank Samuels – I am a part-time MED student in TPS at OISE, with a full time commitment to listen to, discuss with and work with you as we continue to build our university. I stand for integrity, honesty, building trust and establishing safe comfortable environments of and for exceptional teaching and learning. Let's work together! URL: <http://www.youandme4uoft.org>

#### Oliver K. Sorin

As representative on Governing Council, I will continue to push the university to upgrade its academic infrastructure for graduate students (the number of professors in departments, accessible resources, space and equipment, and better email services). I will also press for an increase in the funding package so that students in humanities and social sciences can be on equal footing with their colleagues in divisions 3 and 4. Furthermore, I will ensure that there are more services and campus space for graduate students to help us interact and learn outside of the classroom. Thank you in advance for your support.

#### Morgan Vanek

An outspoken advocate for an equitable, accessible, and publicly accountable university both within the English department and as Chief Steward for CUPE 3902, I've worked hard this year to critique and diminish barriers to engagement in the important work of governing this institution. While organizing TAs across campus in pursuit of better working and learning conditions, I've also come to appreciate the many concerns we share for the future and direction of our diverse degree programs, our funding, and our academic freedom, and I remain committed to reminding our Governing Council that these should be its priorities, too.

### Graduate Students, Constituency II (Physical Sciences and Life Sciences)

#### Jenny Hong

As your representative, I aim to push for an increase in our sources of financial support, particularly for students who are in their sixth year (or above) of PhD studies. I also aim to push for an expansion in student services (such as housing, career and academic counseling), student benefits/discounts, and campus space available for graduate students. Previously, I was a member of the Undergraduate Advisory Committee, accessing and evaluating new curriculum proposals in order to create a better learning environment for the students. Similarly, I commit to being a strong voice for all graduate students. Vote for Jenny Hong.

#### Mu-Qing Huang

More SUSTAINABLE university policies and practices? More Teaching Assistant positions? More professional networking opportunities? More academic support? We deserve them all. As an M.Sc. student in Forestry Economics, I bring a GREEN and FRESH perspective into

practical issues that matter the most to my fellow students. I have been serving the various U of T student groups since 2006; my familiarity with the campus operates as a loyal bridge between you and your university. Genuine, experienced, passionate, strategic and dedicated, Mu-Qing has a strong voice that speaks YOUR concerns. Cast your vote, and expect a change next year!

#### Keven Roy

Graduate students fulfill a crucial part of the university's mission, and representation of our interests is crucial. As a Ph.D. student in the Physics Department, I have been involved with the departmental student union, as well as in various initiatives and clubs around campus. I will be a strong voice for graduate student interests, and I will make sure I am always available to hear and voice your concerns as a graduate student and member of the University of Toronto community, as well as being proactive in its improvement and development.

#### Chirag Variawa

Thank you for choosing to make an educated vote – I represent being clear, concise and credible. I have a fulfilling history with this university and city, am a member of several successful clubs, and value this learning experience enough to pursue a PhD degree. I've seen and helped UofT grow, and know we can become even better with strong leadership and well-defined core values. I value honesty, transparency, accessibility, and respect for others. By voting for Chirag Variawa, you are voting for realistic progressive action that will help all learners be the best they can be. For specifics visit [www.chiragvariawa.com](http://www.chiragvariawa.com)

### 2011 Governing Council Elections Teaching Staff Candidates' Statements

#### Constituency VII

**(John H. Daniels Faculty of Architecture, Landscape, and Design, Joseph L. Rotman School of Management, Faculty of Forestry, Faculty of Information, Faculty of Law, Faculty of Music and the Factor-Inwentash Faculty of Social Work)**

Voting information available at: <http://www.governingcouncil.utoronto.ca/elections.htm>

**Voting Period: Monday, February 28, 2011 at 9:00 a.m. to Friday, March 11, 2011 at 5:00 p.m.**

#### Edward Iacobucci

The University faces a variety of governance challenges. The endowment and pension plan raise potential financial concerns. Additionally, the University has different stakeholders with possibly conflicting views on appropriate priorities and strategies going forward. My research and teaching focus on corporate law, financial structure and governance. I have also written and taught about the role of stakeholders in corporate governance. Finally, I have served on three corporate boards (and on UTAM's board for a brief transition period). While the University faces a unique set of governance concerns, I believe that my background would serve me well on Governing Council.

#### Brigitte Shim

Since 1988, I have been a member of the university's Faculty of Architecture, Landscape and Design. I have served on the U of T's Design Review Committee since its inception and am a Build Toronto board member. As an educator and an architect, I am aware of the enormous role the University of Toronto plays in the greater Toronto region. The University of Toronto is a key city builder creating physical, social and cultural assets and it needs to be strategic about how it continues to make a difference in the evolving and dynamic urban fabric it is located in.

Questions about the Governing Council elections process may be directed to the Chief Returning Officer, Mr. Anwar Kazimi (416-978-8427; [anwar.kazimi@utoronto.ca](mailto:anwar.kazimi@utoronto.ca)), or the Deputy Returning Officer, Ms Mae-Yu Tan (416-978-8794; [maeyu.tan@utoronto.ca](mailto:maeyu.tan@utoronto.ca)).



The following are books by U of T faculty and staff. Where there is multiple authorship or editorship with colleagues at other institutions, staff are indicated with an asterisk.



**On Retirements: Playing Seriously with the Work of Growing Older**, by Jon Barnard Gilmore (BPS Books, 312 pages; \$24.95). This book of essays was written over a period of 18 years, partly in response to the dearth of writings about both retirements and aging in general and partly in response to the effects of modern times on those who have longer memories of a less crowded and less acquisitive world. It examines retirement and aging from the perspective of psychology and suggests throughout that, faced with the challenges of retirement offers, it may be time to become serious about being playful and vice versa.

**Actors and Acting in Shakespeare's Time: The Art of Stage Playing**, by John H. Astington (Cambridge University Press; 260 pages; \$80.95 cloth, \$28.95 paper). The book brings the acting style of the Shakespearean period to life, describing and analyzing the art of the player in the English professional theatre between Richard Tarlton and Thomas Betterton. It pays close attention to the cultural context of stage playing, the critical language used about it and the kinds of training and professional practice employed in the theatre at various times over the course of roughly 100 years — 1558-1660.

**Constitutional Theocracy**, by Ran Hirschl (Harvard University Press; 314 pages; \$45 US). At the intersection of two sweeping global trends — the

rise of popular support for principles of theocratic governance and the spread of constitutionalism and judicial review — a new legal order has emerged: constitutional theocracy. It enshrines religion and interlocutors as *a* or *the* source of legislation and at the same time adheres to core ideals and practices of modern constitutionalism. This book undertakes a rigorous comparative analysis of religion-and-state jurisprudence from dozens of countries worldwide to explore the evolving role of constitutional law and courts in a non-secularist world.

**Forgetful Muses: Reading the Author in the Text**, by Ian Lancashire (U of T Press; 320 pages; \$65). How can we understand and analyze the primarily unconscious process of writing? This new work of neuro-cognitive literary theory maps the interplay of self-conscious critique and unconscious creativity. Drawing on author testimony, cybernetics, cognitive psychology, corpus linguistics and text analysis, the neurobiology of mental aging, the author's close readings of 12 authors, including Caedmon, Chaucer, Coleridge, Joyce, Christie and Atwood, serve to illuminate a mystery we all share.

**Counseling Across and Beyond Cultures: Exploring the Work of Clemmont E. Vontress in Clinical Practice**, edited by Roy Moodley and Rinaldo Walcott

(U of T Press; 304 pages; \$80 cloth, \$34.95 paper). Using as a starting point the pioneering work of Clemmont Vontress, the essays trace the evolution of multicultural counselling and discuss remaining challenges for practitioners. Essays include a personal reflection by Vontress himself, critical analyses of the growth of multicultural counselling, considerations of his influence in Canada and the U.K. and African and Caribbean perspectives on his work.

**Strange New Worlds: The Search for Alien Planets and Life Beyond Our Solar System**, by Ray Jayawardhana (HarperCollins Canada and Princeton University Press; 272 pages; \$29.99). Soon astronomers expect to find alien Earths by the dozens in orbit around distant suns. Before the decade is out, telltale signs that they harbour life may be found. If they are the ramifications for all areas of human thought and endeavour — from religion and philosophy to art and biology — are profound, if not revolutionary. This book brings the latest news from the forefront of research, and tells a tale rich in history and personalities. Available as an ebook from Princeton University Press.

**The Saint and the Sea Monster**, by Caz Zvyatkauskas (wordhord press; 46 pages; \$5.99). In 1250 Yorkshire, England, a monk, a friar and a sailor, each harbouring a deep secret, find themselves unexpected companions in close quarters. As the evening progresses and the mead flows from the keg, they wrestle with legends, lies and the fickleness of fate. Also available as an ebook from Smashwords.



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GRAHAM LECTURE

## The Ecology of Food: Can We Feed the World and Save the Earth?

David Tilman

Regents' Professor & McKnight Presidential Chair in Ecology  
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Wednesday, March 9

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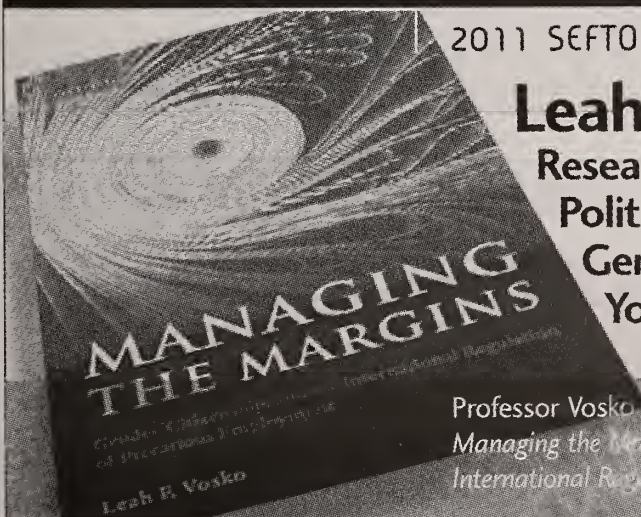
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Centre for Industrial Relations and Human Resources

2011 SEFTON MEMORIAL LECTURE

**Leah Vosko, Canada**  
Research Chair in The  
Political Economy of  
Gender & Work,  
York University



Professor Vosko is the author of the book -  
*Managing the Margins: Gender, Citizenship and the*  
*International Regulation of Precarious Employment*

WHEN Thursday, March 24, 2011, 7:00 p.m.

WHERE Kruger Hall Commons, Woodsworth College, 119 St. George St.

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**March 25th, 2011**  
2:00 pm

**Faculty of Medicine,**  
Medical Sciences Bldg. Room 2172

**Jerrold M. Olefsky, M.D.**  
Distinguished Professor of Medicine  
Associate Dean for Scientific Affairs  
University of California, San Diego

**Role of Inflammation in Insulin Resistance and Diabetes**

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**Evelyn Sommers, PhD, Psychologist,** provides psychotherapy and counselling for individuals and couples from age 17. Covered under U of T benefits. Yonge/Bloor. Visit www.ekslibris.ca; call 416-413-1098.

**Individual psychotherapy** for adults. Evening hours available. Extended benefits coverage for U of T staff. Dr. Paula Gardner, Registered Psychologist, 114 Maitland St. (Wellesley and Jarvis). 416-570-2957.

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## Miscellany

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## LECTURES

**The Ecology of Food: Can We Feed the World and Save the Earth?**  
**Wednesday, March 9**

Prof. David Tilman, University of Minnesota; Graham lecture. 140 University College. 4:30 p.m. *University College*

**Daoust Lestage: From the City to the Object.**  
**Tuesday, March 15**

Renée Daoust, Daoust Lestage Inc., Montreal. Room 103, 230 College St. 6:30 to 8:30 p.m. *John H. Daniels Faculty of Architecture, Landscape & Design*

**The Nuzi Tablets and Ashur-Uballit I.**  
**Wednesday, March 16**

Prof. Maynard Maidman, York University; A.K. Grayson lecture on Assyrian history and culture. B142 Earth Sciences Centre. 8 p.m. *Canadian Society for Mesopotamian Studies*

**Language Lessons of the Early Modern Stage and Page.**  
**Thursday, March 17**

Prof. Marjorie Rubright, English, U of T Scarborough. Senior Common Room, Burwash Hall, Victoria University. 4 p.m. *Reformation & Renaissance Studies and Toronto Renaissance & Reformation Colloquium*

**Recent Works.**  
**Tuesday, March 22**

Stephen Teeple, Teeple Architects Inc., Toronto. Room 103, 230 College St. 6:30 to 8:30 p.m. *John H. Daniels Faculty of Architecture, Landscape & Design*

**Molecular Design for Organic Electronics.**  
**Wednesday, March 23**

Prof. John Anthony, University of Kentucky; Lectures at the Leading Edge series. 116 Wallberg Building. 12:30 p.m. *Chemical Engineering & Applied Chemistry*

**Big Houses, Fast Boats and Lots of Good Salmon: The Complex Lives of Ancestral First Nations in the Pacific Northwest.**  
**Wednesday, March 23**

Prof. Gary Coupland, anthropology. 1101 Sandford Fleming Building. 5:15 p.m. *Archaeological Institute of America, Toronto Society*

**Managing the Margins: Gender, Citizenship and the International Regulation of Precarious Employment.**

**Thursday, March 24**  
Prof. Leah Vosko, York University; Sefton lecture. Kruger Hall Commons, Woodsworth College. 7 p.m. *Woodsworth College*

**Vagrants, Criminals and Madmen: Medico-Theology and the Early Modern Politics of Naturalism.**  
**Friday, March 25**

Prof. Matthew Day, Florida State University. 317 Jackman Humanities Building, 170 St. George St. 2 to 4 p.m. *Institute for the Advanced Study of Religion*

**The Politics of Race and Sexuality.**  
**Tuesday, March 20 to Friday, April 1**

Prof. Dwight McBride, Northwestern University; Alexander lectures. 140 University College. 4:30 to 6 p.m. *University College*

**Materials to Program Cells in Situ.**  
**Wednesday, March 30**

Prof. Dave Mooney, Harvard University; Lectures at the Leading Edge series. 116 Wallberg Building. 12:30 p.m. *Chemical Engineering & Applied Chemistry*

## COLLOQUIA

**Chemistry on the Brain: Understanding the Nicotine Receptor.**

**Friday, March 11**  
Prof. Dennis Dougherty, California Institute of Technology; Peter Yates special lecture. Davenport Seminar Rooms, Lash Miller Chemical Laboratories. 10 a.m. *Chemistry*

**An Opportunity to Think Outside the Box About Learning Chemistry.**  
**Friday, March 18**

Prof. Peter Mahaffy, King's University College. Davenport Seminar Rooms, Lash Miller Chemical Laboratories. 10 a.m. *Chemistry*

**The Long History of Dietetics: Thinking About Food, Expertise and the Self.**

Prof. Steven Shapin, Harvard University. 323 Old Victoria College Building. 4 p.m. *History & Philosophy of Science & Technology*

**Having Your Research Study Audited by the Research Ethics Board, What to Expect.**  
**Wednesday, March 23**

Natalia Zaslavska, audit consultant, CAMH. Room 2022, Russell St. Noon. *Centre for Addiction & Mental Health*

## SEMINARS

**Biodiversity: New Dimensions of the Policy Challenge.**  
**Wednesday, March 9**

Prof. Robert Paehlke, Trent University. 1072 Sidney Smith Hall. 4:10 p.m. *Environment*

**Tai Chi for Older Adults: Improving Physical and Psychological Health.**

**Thursday, March 10**  
Prof. Hala Tamim, York University. Ste. 106, 222 College St. Noon to 1:30 p.m. *Life Course & Aging*

**Screening Disabilities: Visual Fields, Public Culture and the Atypical Mind in the 21st Century.**  
**Thursday March 10**

Prof. Faye Ginsberg, New York University. 208N Munk School of Global Affairs. 4 to 6 p.m. *Study of the United States, Cinema Studies Institute, Innis College and Anthropology*

**Peromyscus: A Mammalian System for Studying Natural Genetic Variation.**

**Friday, March 11**  
Prof. Paul Vrana, University of California Irvine. 432 Ramsay Wright Building. 2 p.m. *Cell & Systems Biology*

**Radical Chastity.**  
**Friday, March 11**

Prof. Gordon Teskey, Harvard University. 205 Northrop Frye Hall, Victoria University. 3:30 p.m. *Reformation & Renaissance Studies*

**Access to Health and Health-Related Services in Highly Multicultural Societies: Chronicle of a Crisis Foretold?**  
**Wednesday, March 16**

Andrea Cortinois, Centre for Global eHealth Innovation, speaker; Prof. Denise Gastaldo, Dalla Lana School of Public Health, discussant. 412 Health Sciences Building. 3 p.m. *Health Care, Technology & Place*

**Post-2010 Climate Politics: What the UN and Canadian Electorate Have In Common.**  
**Wednesday, March 16**

Joanna Dafoe, Canadian Tracker, Adopt a Negotiator. Faculty Club. 4:10 p.m. *Environment*

**U of T — Going to Class May Be Bad for Your Health: The Biological Impact of College Street Air.**

**Thursday, March 17**  
Prof. Chung-Wai Chow, medicine. 208 Rosebrugh Building. 4:10 p.m. *Environment*

**The Real Function of the Chromatin Fibre.**  
**Friday, March 18**

Dr. David Bazett-Jones, Hospital for Sick Children. 432 Ramsay Wright Building. 2 p.m. *Cell & Systems Biology*

**Early Detection of Dementia.**  
**Thursday, March 24**

Prof. Ken Shulman, psychiatry. Ste. 106, 222 College St. Noon to 1:30 p.m. *Life Course & Aging*

**When Is It Safe to Swim in the Great Lakes?**  
**Thursday, March 24**

Prof. Marg Sanborn, McMaster University. 208 Rosebrugh Building. 4:10 p.m. *Environment*

**A Membrane Protein's Signalling Protein Interactome for Arabidopsis; and Sweets Sugar Transporters as Key Players in Pathogen Susceptibility.**  
**Friday, March 25**

Prof. Wolf Frommer, Stanford University. 432 Ramsay Wright Building. 2 p.m. *Cell and Systems Biology*

**Neighbourhood Effects on Mental Health and Well-Being.**  
**Wednesday, March 30**

Anthony Chum, doctoral fellow, comparative program on health and society. 208N Munk Centre of Global Affairs. 10 a.m. to noon. *Comparative Program on Health & Society*

## MUSIC

**FACULTY OF MUSIC EDWARD JOHNSON BUILDING Opera Series.**

**Thursday Through Sunday, March 10 to March 13**  
Mozart's *Don Giovanni*; Miah Im, conductor; Allison Grant, director. MacMillan Theatre. 7:30 p.m.; Sunday, 2:30 p.m. Tickets \$25, students and seniors \$15.

**Thursdays at Noon.**

**Thursday, March 17**  
John Rudolph, percussion; Kathleen Rudolph, flute. Walter Hall. 12:10 p.m.

**Thursday, March 24**

Henri-Paul Sicsic, piano. Walter Hall. 12:10 p.m.

**Choirs in Concert.**

**Friday, March 18**  
Music for voices and chamber ensembles: MacMillan Singers and University Women's Chorus; conducted by Hilary Apfelstadt. MacMillan Theatre. 7:30 p.m. Tickets \$15, students and seniors \$10.

**Faculty Artist Series.**

**Monday, March 21**  
Nathalie Paulin, soprano; Monica Whicher, soprano; Che Ann Loewen, piano. Walter Hall. 7:30 p.m. Tickets \$25, students and seniors \$15.

**World of Music.**

**Tuesday, March 22**  
Student composers concert. Walter Hall. 7:30 p.m.

**Saturday, March 26 and Wednesday, March 30**

World Music Ensembles, featuring African drumming, Japanese Taiko, Korean, Steel Pan and Klezmer. Walter Hall. 7:30 p.m.

**Sunday, March 27**

Percussion Ensemble; Beverley Johnston, director. Walter Hall. 7:30 p.m.

**Jazz Concerts.**

**Thursday, March 24**  
Tim Hagans with U of T Jazz Orchestras. MacMillan Theatre. 7:30 p.m.

**Tuesday, March 29**

Vocal Jazz ensemble. Walter Hall. 7:30 p.m.

**U OF T ART CENTRE**

**Guitar Orchestra**

**Thursday, March 24**  
Jeffrey McFadden, director; co-presented by the Faculty of Music. 7:30 p.m.

## PLAYS & READINGS

**Winter's Tale.**

**Thursday to Saturday, March 10 to March 12; Tuesday to Saturday, March 15 to March 19**  
By William Shakespeare; directed by Mimi Mekler. Theatre Erindale production. Erindale Studio Theatre, U of T Mississauga. Fridays and Saturdays, 8 p.m.; weeknights 7:30 p.m. Tickets \$15, students and seniors \$10. Box office: 905-569-4369; www.theatreerindale.com.

## FILMS

**Freedom Riders.**

**Thursday, March 10**  
Written, produced and directed by Stanley Nelson. Innis Town Hall. 7 to 10 p.m. *Study of the United States*

**Marcus Garvey:**

**Look for Me in the Whirlwind.**  
**Friday, March 11**  
Directed by Stanley Nelson; screening followed by panel discussion with Stanley Nelson. 2102 Sidney Smith Hall. 6 to 9 p.m. *Study of the United States*

## EXHIBITIONS

**U OF T ART CENTRE**

**UNIVERSITY COLLEGE To March 19**  
**The University College Collection: Great Art for a Great University.**  
Created largely through the generosity of donors over many generations, the University College collection comprises some 500 works of art, ranging in date from the earliest years of the college to the present.

**North Korean Images**

**at Utopia's Edge.**  
The exhibition spans three decades and features 24 wood block prints from the Nicholas Bonner Collection, offering a fascinating picture of North Korean conceptions of daily life and work, family and "Fatherland." Hours: Tuesday to Friday, noon to 5 p.m.; Saturday, noon to 4 p.m.

**Work in Progress.**

**To March 31**  
Exhibition showcases pieces from emerging artists in the UTM-Sheridan art and art history program. Featured artists are Dorothea Hines, Sebastian Koeber, Andre Markovic, Emily Mahon, Patti Meris, Meaghan O'Brien and Breann Ritchie. Art Lounge. Hours: Tuesday to Friday, noon to 5 p.m.; Saturday, noon to 4 p.m.

**JUSTINA M. BARNICKE GALLERY HART HOUSE**

**Ron Terada: Who I Think I Am To March 20**  
Vancouver-based artist Ron Terada has come to international attention for his deadpan appropriations of vernacular texts typically drawn from street signage, popular music, television and advertising using painting, graphic posters and video projections. Both galleries. Gallery hours: Monday to Wednesday and Friday, 11 a.m. to 5 p.m.; Thursday, 11 a.m. to 7 p.m.; Saturday and Sunday, 1 to 5 p.m.

**DORIS MCCARTHY GALLERY U OF T SCARBOROUGH**

**Seeing Sound.**  
**To April 13**  
This exhibition is a 25-year overview of renowned sound and multimedia artist Gordon Monahan's career. Gallery hours: Wednesday to Friday, 10 a.m. to 4 p.m.; Saturday, noon to 5 p.m.

**THOMAS FISHER RARE BOOK LIBRARY**

**'Great and Manifold': A Celebration of the Bible in English.**  
**To June 3**  
Commemorating the 400th anniversary of the first printing of the King James Bible, this exhibition offers a selection of rare manuscripts and books that trace the evolution of the English Bible from the Middle Ages to current times; curated by Pearce Carefoote. Hours: Monday to Wednesday and Friday, 9 a.m. to 5 p.m.; Thursday 9 a.m. to 8 p.m.

## COMMITTEES

**Chair, Department of East Asian Studies**

A search committee has been established in the Faculty of Arts & Science to recommend a chair for the Department of East Asian Studies. Members are: Professors Meric Gertler, dean, Faculty of Arts & Science (chair); Sandy Welsh, acting vice-dean (teaching and learning); Brian Corman, dean, School of Graduate Studies; Linda Rui Feng, Janet Poole, Andre Schmid and Yiching Wu, East Asian studies; and Elizabeth Legge, art; and Jotaro Arimori, lecturer, East Asian studies; Norma Escobar, secretary, East Asian studies; and Julianne Kelso, undergraduate student, and Mark McConaghy, graduate student, East Asian studies.

The committee would welcome nominations and/or comments from interested members of the university community. These should be submitted by March 15 to Professor Meric Gertler, dean, Faculty of Arts & Science, Room 2005, Sidney Smith Hall; email: officeofthedean.artsci@utoronto.ca.

**Chair, Department of Geology**

A search committee has been established in the Faculty of Arts & Science to recommend a chair for the Department of Geology. Members are: Professors Meric Gertler, dean, Faculty of Arts & Science (chair); Robert Baker, vice-dean (research and graduate programs); Bridget Bergquist, Jim Mungall and Barbara Sherwood Lollar, geology; Nicholas Eyles, physical and environmental sciences, U of T Scarborough; Robert Morris, chemistry; Lindsay Schoenbohm, chemical and physical sciences, U of T Mississauga; and Berry Smith, vice-dean (students), School of Graduate Studies; and Charly Bank, senior lecturer, geology; Karyn Gorra, digital media/communications co-ordinator, geology; and Veronica Di Cecco, undergraduate student, and Katrina van Drongelen, graduate student, geology.

The committee would welcome nominations and/or comments from interested members of the university community. These should be submitted by March 15 to Professor Meric Gertler, dean, Faculty of Arts & Science, Room 2005, Sidney Smith Hall; email: officeofthedean.artsci@utoronto.ca.



# Universal Design for Science Education

## LESSONS THAT REACH BEYOND THE FIRST ROW

BY JUDITH POË

**Traditionally in large** chemistry lectures there has been heavy reliance on the hydraulic model of teaching. It is based on the assumption that the transfer of information from professor to student is like a liquid being poured from one flask to another. And it works remarkably well for the students who sit in the front rows of our classes because they are usually the best students, the ones who actively participate in their education.

As for the rest of the class, days, sometimes weeks may pass with hardly a word exchanged — no communication, no feeling and not much learning going on. According to Lee Shulman, president emeritus of the Carnegie Foundation for the Advancement of Teaching, “The great enemies of learning are anonymity and invisibility. People who are invisible don’t learn. In no sense are they accountable, in no sense are they responsible and therefore they can simply turn off.” Thus, we need to employ teaching techniques that penetrate beyond the front rows and actively engage those who silently lurk behind them.

The majority of students in my introductory chemistry courses have no intention of pursuing the subject professionally. This makes it especially important that, throughout the course, they are made to appreciate just why anyone would want to know the material included in the curriculum, both in the context of development of the subject and in terms of existing or potential applications. They need to see the relationship between material in the course and data upon which they will draw for making personal, social and political decisions in the future. They should come to see chemistry, like music and art, as an integral part of our culture.

It is common for such beginning students to be set routine tasks that impart content knowledge. One must learn to conjugate the irregular verbs in French before one can read the poetry of Beaudelaire. So too, in chemistry, one must study the many reactions of organic chemistry before being able to recognize the beauty of a natural product synthesis. But since such drill may dull creativity and imagination, we must guard against thwarting in an early stage of a student’s career those qualities that will be essential for success at a later stage.

Problem-based learning (PBL) is a process of inquiry and investigation which promotes active learning and critical thinking. It is a process by which the content and methods of a discipline are learned in an environment in which they are to be used

to address a real world problem (originally called learning in a functional context). It is a strategy in keeping with the recommendation of the American Association for the Advancement of Science to teach science as it is practised.

Students, working in groups, are presented with problems whose solutions require certain information and/or skills that they do not yet possess. They must identify the required material that is relevant to the problem, locate its sources and develop strategies for its use. This then defines the curriculum and students immediately realize, on a need-to-know basis, the reasons for including certain material in the curriculum.

The problem, in effect, is directing the learning. This is in contrast to the more usual instruction in which problems are used to illustrate how to apply the knowledge after it is learned or to test what knowledge has been learned. The key feature here is that the learning process is initiated and directed by the problem.

In a sense, PBL is a universal process practised from the time an infant learns to satisfy its physical and emotional needs. But it is a skill that becomes submerged by experiencing years of prescriptive learning, making the transition back to a less instructor-dependent form of learning not an easy one.

The problems posed should require students to use the same cognitive processes as are required in real life situations. And, as in life, they may be ill-structured problems, involving information that is ambiguous and confusing. The students learn to be comfortable dealing with probability rather than certainty; they learn

to tolerate doubt and they come to appreciate that learning is an ongoing process and that educated, albeit imperfect, judgments can be made throughout the stages of this process.

PBL projects, if given a clear societal goal, can sometimes be translated into service-learning activities which again engage the middle row students. One reason often offered by talented undergraduates for not pursuing a program in the physical sciences is the perceived lack of relevance of the courses to real world, human experiences. While a chemist might ask, incredulously, What in the world isn’t chemistry? students can easily be blinded by the theories, formulae and equations and fail to see their relevance and application to societal matters.

Service-learning, the integration of credit-bearing coursework with community service and critical reflection, provides a means to address this dilemma. Students provide community service, for which their studies have prepared them, in response to community self-identified needs. In the process they come to appreciate the connection between their service, their academic work and their roles as citizens.

Finally, an emerging pedagogy in the physical sciences is learning in a studio course environment. Pioneered at Rensselaer Polytechnic Institute and subsequently adopted at MIT and the University of Michigan, this technique substitutes the integrated science studio in place of the more conventional lecture-laboratory-tutorial format. The studio space is designed to allow the theory and laboratory components of study to be integrated so that learning can be done

collaboratively and interactively with hands-on experimentation supplemented by the integration of technology into the curriculum through simulations and computer controlled experiments.

The instructor facilitates group work by the students, interjects short lectures as appropriate and oversees experiments designed by the students in an effort to address the learning objectives. As with PBL and service-learning, the group nature of this teaching technique provides students with the stimulation of others who are diverse in experience and opinion and facilitates penetration to those who would otherwise have been in the middle rows of our classes.

A final question merits consideration. Is coverage sacrificed in courses that focus so much on active student participation in their learning; are the very best students being cheated out of content in this effort to penetrate beyond the front rows?

On the contrary, as with universal design, all students benefit. Trading content for teaching critical thinking skills is in line with the underlying principle of Project 2061, an American Association for the Advancement of Science initiative to reform science education that advises us to “teach less in order to teach it better.” Moreover, students should be aware that a portion of what we tell them will ultimately be found to be incorrect and we should remember that we don’t necessarily know which portion that is.

That this is a result of ongoing research means that students need to become comfortable in dealing with a changing body of knowledge. They need to understand that the material in the chemical literature is not immutable truth but rather represents our current understanding of the structure and dynamics of matter as it is embodied today in a discipline that is constantly changing and being enlarged. Students need to appreciate that chemistry is an exciting discipline in which discoveries, sometimes fundamental discoveries that challenge text-book wisdom, are being made.

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